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**DETAILED DESCRIPTION**

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**[Detailed Description of the Invention]****[0001]**

**[Field of the Invention]** Even if this invention is the case move to the field of other directional antennas which can be communicated about the wireless data telecommunication system which matches and manages the directional antenna used for the communication link with the identifier of the child office where the key station equipped with two or more directional antennas can radiocommunicate, and the child office concerned from the field of the directional antenna with which the child office is especially managed by the key station which can be communicated, it relates to the wireless data telecommunication system with which a key station discovers the child office concerned, and resets the contents of management of the child office concerned.

**[0002]**

**[Description of the Prior Art]** For example, in the wireless LAN system, communicating a data signal etc. on radio between the movable child offices (UM:User Module) connected to the key station (CM:Control Module) connected to the backbone network and the data processor is performed. An example of a wireless LAN system is shown in drawing 7, and the system of this drawing is equipped with the key station 1 connected to the backbone network 3, and two or more child offices 2a-2c connected to the personal computers P1-P3 which are data processors at it. In addition, the child offices 2a-2c and personal computers P1-P3 are connected by 1 to 1 through the PC card interfaces F1-F3.

**[0003]** In such a system, since the demand of wanting to realize mass data communication by the wireless medium at high speed, for example with the note PC available as a data processor (personal computer of note size), the spread of pocket information communication terminals (PDA:Personal Digital Assistant), or the spread of the Internet available as a backbone network is increasing, the need of securing sufficient transmission band using the electric wave of high frequency bands, such as a submillimeter wave band, has arisen.

**[0004]** For this reason, in the key station 1 of the wireless LAN system shown in above-mentioned drawing 7, it has realized holding many child offices 2a-2c by having two or more antennas which had the directivity suitable for a communication link in a high frequency band, changing the directional antenna of these plurality, and performing the communication link with the child offices 2a-2c, securing communication link quality. In addition, since the directivity of the electric wave of a high frequency band is strong, the fault of degradation of the communication link quality by multi-pass phasing etc. arises, and if it is not desirable to use for the radio in a high frequency band the Omni (omnidirectional) antenna used conventionally, for example, the Omni antenna is used for a communication link in a high frequency band, especially such fault will be notably produced, when the electric wave of the band more than the frequency band of a submillimeter wave is used.

**[0005]** Moreover, the example of a format of the communication link frame used for the radio between the above-mentioned key station 1 of a wireless LAN system and the above-mentioned child offices 2a-2c is shown in drawing 8 (a). One information signal slot B for transmitting an information signal (Bch) into one frame in this format Four confirmation-of-receipt signal slots A1 for transmitting a

confirmation-of-receipt signal (Ach) - A4, Twelve demand signal slots R1-R12 for transmitting a demand signal (Rch), Four enabling-signal slots G1-G4 for transmitting an enabling signal (Gch), For example, three data signal slots DS1-DS3 for transmitting a short data signal (DSch) and one data signal slot DL 4 for transmitting a long data signal (DLch) are included in order of the publication.

[0006] Moreover, the still more detailed example of a configuration of each slot for transmitting each above-mentioned signal to drawing 8 (b) - drawing 8 (g) is shown, and as shown in these drawings, in this example, the burst header signal shown in the guard time signal shown in drawing 8 (h) or drawing 8 (i) is added to the head of each signal. In addition, as a burst header signal is shown in above-mentioned drawing 8 (i), it consists of a bit synchronization signal H1, a frame alignment signal H2, and a recognition signal H3, and a change and bit synchronization of transmission and reception, discernment of a signal, etc. are performed by these.

→ [0007] As an example of the concrete communication procedure performed using such a communication link frame, it first performs detecting the child offices 2a-2c which do not yet recognize the information signal by carrying out wireless transmission and which can be radiocommunicated through the information signal slot B in a key station 1. On the other hand, if the child offices 2a-2c which are not yet recognized by the key station 1 receive an information signal, a demand signal by carrying out wireless transmission to a key station 1 through the demand signal slots R1-R12 in the child offices 2a-2c concerned. It performs making a key station 1 recognize self (the child offices 2a-2c concerned) or requiring the data communication from the child offices 2a-2c concerned to a key station 1 of a key station 1.

[0008] The key station 1 is equipped with the management tool which matches and manages the directional antenna used for the communication link with the identifier of the child offices 2a-2c, and the child offices 2a-2c concerned. Moreover, in a key station 1 When the demand signal by which wireless transmission was carried out from the child offices 2a-2c is received, it performs matching and managing the identifier of the child offices 2a-2c which carried out wireless transmission of the demand signal concerned, and the directional antenna which received the demand signal concerned. That is, in a key station 1, it is regarded as that to which the child offices 2a-2c concerned exist in the subordinate (field which can be communicated) of a directional antenna who received the demand signal by which wireless transmission was carried out from the child offices 2a-2c, and the child offices 2a-2c concerned are managed. In addition, the identification number (UM\_ID) of the proper by which a key station 1 faces holding the child offices 2a-2c, and is given to the child offices 2a-2c concerned as an identifier of the child offices 2a-2c, for example is used.

[0009] An example of the contents of management by the management tool of the above-mentioned key station 1 is shown in drawing 9. In this drawing For example, it prepares in each child office 2a-2c of every [ to which the key station 1 has held a table (CCB table) Q2 called CCB (call control block) in the memory of a key station 1 ]. When modification etc. carries out the variable stored in the CCB table Q2 concerned, it is performing managing the condition of each child offices 2a-2c etc. As specifically shown in this drawing, corresponding to the identification numbers 71a-71c of each child offices 2a-2c which a key station 1 holds, the state number 72 and sector number 73 grade of each child offices 2a-2c concerned are set to the CCB table Q2, and a change etc. is made to it timely. Here, in a state number 72, it is the information which shows the condition of each child offices 2a-2c, and when a sector antenna with two or more sector units is used as two or more directional antennas, it is [ sector number / 73 ] the information which specifies the sector unit used for the communication link with each child offices 2a-2c.

[0010] If the demand signal by which wireless transmission was carried out from the child offices 2a-2c which are not yet recognized to have described above in a key station 1 is received The directional antenna which received the identification number and the demand signal concerned of the child offices 2a-2c concerned is matched and managed. Henceforth Using the directional antenna according to the set-up contents of management, i.e., a sector unit, unless the demand signal by which wireless transmission was carried out from the child offices 2a-2c concerned is received again, the communication link with the child offices 2a-2c concerned is performed.

[0011] When the data communication (uphill data communication) from the child offices 2a-2c concerned to a key station 1 is required as an example by the demand signal by which wireless transmission was carried out from the child offices 2a-2c The notice of DS3 and DL4 etc. is performed. data signal slot DS1- used for data communication with the child offices 2a-2c concerned using an enabling signal in a key station 1 -- slot DS1- notified in the child offices 2a-2c -- wireless transmission of the data signal is carried out using DS3 and DL4, and wireless transmission of the confirmation-of-receipt signals, such as ACK and NAK, is carried out to the child offices 2a-2c concerned in a key station 1 according to the receiving situation of the data signal concerned. Moreover, in this case, from the child offices 2a-2c, the contents of management are reset to the sector number of the sector unit which received the demand signal, and the communication link with the child offices 2a-2c concerned is performed to it in a key station 1 using the sector unit concerned which reset.

[0012] Moreover, in [ to the child offices 2a-2c which the key station 1 has already managed ] performing data communication (getting down data communication) data signal slot DS1- used for data communication with the child offices 2a-2c using an enabling signal in a key station 1, while performing the notice of DS3 and DL4 etc. notified slot DS1- wireless transmission of the data signal is carried out using DS3 and DL4, and wireless transmission of the confirmation-of-receipt signals, such as ACK and NAK, is carried out to a key station 1 in the child offices 2a-2c according to the receiving situation of the data signal concerned. Moreover, data communication to the child offices 2a-2c concerned is performed in this case in a key station 1 using the already managed sector unit about the child offices 2a-2c used as the destination which carries out wireless transmission of the data signal.

[0013]

[Problem(s) to be Solved by the Invention] however, in the above wireless LAN systems For example, if the child office concerned has moved to the subordinate of other sector units from the subordinate of the sector unit managed by the key station when [ to the child office which the key station has already managed ] getting down and performing data communication In a key station, there was fault of it almost becoming impossible to perform normal data communication between the child offices concerned, even if it uses the sector unit managed about the child office concerned.

[0014] The example of a situation in case the above faults arise is shown in drawing 10 . As shown in this drawing, in the child office already managed by the key station If there are no data which carry out wireless transmission to a key station, even if it will be the case where the information signal from a key station is received, in order not to carry out wireless transmission of the demand signal, in the going-down data communication from a key station to a child office For example, a communication link is performed using the sector unit to which it had not told that a communication link was started ignited by having received the demand signal with which wireless transmission of the key station was carried out from the child office, for example, the key station received the last demand signal from the child office concerned. for this reason, as described above, when the child office concerned has moved to the subordinate of other sector units Since it becomes impossible to receive the enabling signal and data signal by which wireless transmission was carried out from the key station in the child office concerned, Even if a key station performs resending processing as opposed to this, without carrying out wireless transmission of the confirmation-of-receipt signal from the child office concerned to a key station, it will become resending over someday and the data for transmission will be discarded.

[0015] In addition, since the sector unit suitable for performing the communication link with the child office concerned is managed by the key station when current exists, for example in the subordinate of the sector unit in which the child office is managed by the key station, even if it is the case from a key station to a child office where get down and data communication is performed, especially a problem is not produced. Moreover, possibility that normal data communication will be performed is high, and especially a problem is not produced from a key station performing data communication using the sector unit which received the demand signal from the child office concerned, also when going-up data communication from a child office to a key station is performed.

[0016] It is what was made in order that this invention might solve the above conventional technical problems. The directional antenna used for the communication link with the identifier of the child office

where the key station equipped with two or more directional antennas can radiocommunicate, and the child office concerned is matched and managed. In the system by which the child office which received the data signal concerned carries out wireless transmission of the confirmation-of-receipt signal to a key station while changing a directional antenna according to the contents of management concerned and carrying out wireless transmission of the data signal over a child office. For example, even if it is the case where it has moved to the subordinate of other directional antennas from the subordinate of the directional antenna with which it gets down, data communication faces being carried out, and the child office concerned is managed by the key station from a key station to a child office. It aims at offering the wireless data telecommunication system with which a key station can discover the child office concerned, and can reset the contents of management of the child office concerned to a suitable directional antenna.

[0017] Moreover, especially this invention aims at offering the technique suitable for using a sector antenna as two or more above-mentioned directional antennas, using a wireless LAN system as the above-mentioned wireless data telecommunication system. Moreover, even if this invention is the case where the data signal by which wireless transmission was further carried out from the key station when for example, the child office moved is not received by the child office concerned, when a key station resends the data signal concerned to the child office concerned, it aims at offering the wireless data telecommunication system which can be sent certainly.

[0018]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, in the wireless data telecommunication system concerning this invention, data communication from the key station equipped with two or more antennas which had directivity to a movable child office is performed as follows. That is, in a key station, it performs changing to the directional antenna with which the directional antenna used for the communication link with the identifier of the child office where a management tool can radiocommunicate, and the child office concerned is matched and managed, and the data transmitting means has managed the data signal over a child office corresponding to the identifier of the child office concerned, and carrying out wireless transmission. In this case, when the child office used as the destination of the data signal by which wireless transmission was carried out, for example from the key station exists in the subordinate of the directional antenna managed by the key station, in the child office concerned, a confirmation-of-receipt means carries out wireless transmission of the confirmation-of-receipt signal from a key station to a key station according to having received the data signal by which wireless transmission was carried out.

[0019] If the child office which, on the other hand, serves as the destination of the data signal by which wireless transmission was carried out from the key station has moved to the subordinate of other directional antennas from the subordinate of the directional antenna managed by the key station, in the child office concerned, the data signal concerned cannot be received and carrying out wireless transmission of the confirmation-of-receipt signal to a key station will not be performed. In this case, it embraces having not received the confirmation-of-receipt signal from a child office to the data signal which carried out wireless transmission in the key station. Wireless transmission of the inquiry signal with which an inquiry means contains the identifier of the child office concerned using a different directional antenna from the directional antenna which carried out wireless transmission of the data signal concerned is carried out. The thing which contained the identifier of the child office concerned in the child office and for which it asked and the signal was received from the key station is embraced. A response means carries out wireless transmission of the reply signal to a key station, and a resetting means resets the contents of management of the child office concerned by said management tool in a key station to the directional antenna which received the reply signal concerned according to having received the reply signal which carried out wireless transmission and by which asked and wireless transmission was carried out from the child office according to the signal.

[0020] Therefore, even if it is the case where it has moved to the subordinate of other directional antennas from the subordinate of the directional antenna with which it faces carrying out wireless transmission of the data signal from a key station to a child office, and the child office concerned is

managed by the key station as mentioned above the reply signal from the child office [ as opposed to / ask and / a signal ] concerned described above in the key station -- being concerned -- others -- the contents of management according to a management tool according to having received with the directional antenna -- the identifier of the child office concerned -- being concerned -- others -- it can reset by the contents which matched the directional antenna. Thereby, in a key station, a suitable directional antenna can be managed to the child office concerned, and subsequent data communication can be normally performed by using the directional antenna which reset.

[0021] Moreover, with the wireless data telecommunication system concerning this invention, the wireless data telecommunication system concerned is a wireless LAN system, and two or more antennas of said key station consist of sector antennas which allotted two or more sector units which have directivity to the radial. That is, using a sector antenna, in order to prevent phasing by the multi-pass environment etc., especially when a key station and a child office are established in indoor [ many obstructions exist, for example ] in a wireless LAN system applies this invention to the wireless LAN system which equipped the key station with the sector antenna as mentioned above by carrying out examination etc., and it is suitable.

[0022] Moreover, in the wireless data telecommunication system concerning this invention, when the wireless LAN system which equipped the key station with the sector antenna as the wireless data telecommunication system concerned was used, the inquiry means of said key station changes from the sector unit which carried out wireless transmission of said data signal to the sector unit which carries out sequential contiguity, and was made to carry out wireless transmission of said inquiry signal. therefore, when the child office moved, for example and the confirmation-of-receipt signal from the child office concerned is not received in a key station It starts with asking the subordinate of the sector unit which adjoins the sector unit managed about the child office concerned whether the child office concerned exists, and checking using a signal. By checking whether the child office concerned exists in the subordinate of the sector unit which carries out sequential contiguity, the child office concerned is efficiently discoverable.

→ [0023] Moreover, in the wireless data telecommunication system concerning this invention, the data signal over a child office is further resent in each mode shown above in said key station using the directional antenna which the resending means reset with said resetting means. as mentioned above, the contents of management of the child office moved to the subordinate of other directional antennas from the subordinate of a directional antenna who has managed in the key station -- being concerned -- others -- since data communication with the child office concerned can be normally performed after using the directional antenna which reset by resetting to a directional antenna, before resetting, the data signal which was not received by the child office can be resent to the child office concerned, and can be sent certainly.

[0024]

[Embodiment of the Invention] One example concerning this invention is explained with reference to a drawing. This example shows the case where the wireless data telecommunication system concerning this invention is applied to a wireless LAN system, and explains as an example the case where the key station with which the wireless LAN system concerned was equipped radiocommunicates a data signal etc. between movable child offices using a sector antenna.

[0025] a book -- an example -- wireless LAN -- the structure of a system -- an example -- for example, -- the above -- drawing 7 -- having been shown -- a thing -- the same -- namely, -- a book -- an example -- wireless LAN -- a system -- \*\*\*\* -- a backbone network -- three -- connecting -- having had -- a key station -- (-- CM --) -- one -- a PC card -- an interface -- F -- one - F -- three -- minding -- a data processor (for example, personal computer) -- P -- one - P -- three -- connecting -- having had -- plurality -- being movable -- a child -- an office -- (-- UM --) -- two -- a -- -- two -- c -- having -- having -- \*\*\*\* . In addition, this example explains from after [ expedient ] explaining using the sign same as a sign of each configuration sections 1, 2a-2c with which the above-mentioned wireless LAN system of this example was equipped, F1-F3, and P1-P3 as what was shown in above-mentioned drawing 7 .

[0026] Moreover, the example of a format of the communication link frame used for the radio between the key station 1 of this example, and the child offices 2a-2c As it is the same as that of what was shown in above-mentioned drawing 8 , namely, was shown in above-mentioned drawing 8 (a), for example, in one frame One information signal slot B, four confirmation-of-receipt signal slots A1 - A4, Twelve demand signal slots R1-R12, four enabling-signal slots G1-G4, three short data signal slots DS1-DS3, and one long data signal slot DL 4 are included in order of the publication. In this example, a TDD communication link is performed by this communication link frame between a key station 1 and the child office 2.

[0027] Moreover, by this example, although the example of a configuration of each slot is the same as that of what was shown in for example, above-mentioned drawing 8 (b) - drawing 8 (g) almost, processing concerning this invention is realized by using the information signal slot B and the demand signal slots R1-R12 also for a different application from transmitting a usual information signal and a usual demand signal so that it may mention later. Moreover, the burst header signal shown in the guard time signal shown in above-mentioned drawing 8 (h) or above-mentioned drawing 8 (i) is added to the head of the signal in each slot, and the burst header signal consists of a bit synchronization signal H1, a frame alignment signal H2, and a recognition signal H3. in addition -- this example -- explanation -- for convenience -- since -- each slots B and A1 which constitute the above-mentioned frame used by the radio of this example - A4, R1-R12, G1-G4, and DS1- it explains using the sign same as a sign of DS3 and DL4 as what was shown in above-mentioned drawing 8 .

[0028] Here, the example of a configuration of a key station 1 or the child offices 2a-2c with which the wireless LAN system of this example was equipped is shown. In addition, since the configuration and actuation of each child offices 2a-2c with which the wireless LAN system of this example was equipped are the same, below, from from [ after / expedient / explaining ], they indicate the child offices 2a-2c of these plurality to be the child offices 2 collectively [ actuation ], and explain the example of a configuration and example of operation.

[0029] The example of a configuration of the key station 1 of this example is shown in drawing 1 . In this key station 1 The antenna section 11 equipped with the antenna with directivity, and the baseband processing section (BB section) 12 which performs processing of baseband signaling etc., It has the RF section 14 which performs mixing the IF section 13 which performs the strange recovery of baseband signaling etc., and baseband signaling and a communication link carrier, dissociating, etc., and the control section 15 to which control etc. carries out each [ these ] processing sections 11-14.

[0030] The antenna section 11 is equipped with the switch section 21 which changes the sector unit used for a communication link out of these [ 12 sector antenna section T which consisted of sector units which allotted 12 sector units which have directivity to the radial, and ] 12 sector units, and the change of the sector unit by the switch section 21 is controlled by the control section 15 mentioned later. Moreover, in this example, each sector unit has the directivity of 30 degrees, and the field (service area) which can be communicated is formed in 360 degrees as a whole of 12 sector units.

[0031] Two or more antennas which had directivity are constituted from this example by the sector antenna which allotted the 12 above-mentioned sector units to the radial. In addition, in this invention, as the number of antennas with the directivity with which a key station is equipped, if it is plurality, there needs to be especially no limitation and does not necessarily need to be 12 pieces.

[0032] The BB section 12 is equipped with the communications control section 22 which controls transmitting processing and reception, the transmit data processing section 23 which performs processing of the data used as the candidate for transmitting etc., and the received-data processing section 24 which performs processing of the received data etc. The communications control section 22 performs a serial / parallel (S/P) conversion carrying out parallel / serial (P/S) conversion carrying out the data received from the control section 15, and outputting to the transmit data processing section 23, the data inputted from the received-data processing section 24, and transmitting to a control section 15.

[0033] Moreover, the transmit data processing section 23 performs having the logical circuit which performs the scrambler for the FEC encoder, zero oppression of baseband signaling, and the secrecy which perform for example, error correction processing, and the synchronours control of the wireless

frame formed with the digital signal, the circuit which performs S/P transform processing, and error correction processing etc. carrying out the data inputted from the communications control section 22, and outputting to the IF section 13. Moreover, the received-data processing section 24 performs having the circuit which performs for example, P/S transform processing, a buffer, the circuit which performs the synchronous control of a wireless frame, the descrambler which decodes the scrambled signal, the FEC decoder which performs error correction processing, and error correction processing etc. carrying out the data inputted from the IF section 13, and outputting to the communications control section 22.

[0034] The IF section 13 is equipped with the strange recovery section 25 which performs strange recovery processing, and the dispatch section 26 which sends a signal wave. The strange recovery section 25 For example, the function which modulates digital baseband signaling, The function which restores to digital baseband signaling, and transmitting processing () Namely, it has the switch function which changes modulation processing and reception (namely, recovery processing). It performs a recovery etc. using as the original data etc. for a modulation etc. to make a data signal etc. the data inputted from the transmit data processing section 23, and to output to mixing / separation section 28 of the RF section 14, the data signal inputted from the mixing / separation section 28 concerned, and outputting to the received-data processing section 24. Moreover, the dispatch section 26 performs having the oscillator PLL for generating the signal wave of a predetermined frequency etc., and outputting the signal wave which made it generate to the carrier generation section 27 of the RF section 14, or the above-mentioned strange recovery section 25.

[0035] The RF section 14 is equipped with mixing / separation section 28 which performs mixing the carrier generation section 27 which generates a communication link carrier, and baseband signaling and a communication link carrier (composition), or dissociating, and the transceiver change section 29 which changes transmitting processing and reception. The carrier generation section 27 performs having the multiplier which carries out multiplying of the frequency of the signal wave inputted from the dispatch section 26, the amplifier (AMP) which amplifies a signal wave, generating a communication link carrier (for example, millimeter wave) using the signal wave inputted from the dispatch section 26, and outputting to mixing / separation section 28.

[0036] Moreover, mixing / separation section 28 is equipped with the function to perform mixing the modulated baseband signaling and a communication link carrier or dissociating. Mixing the communication link carrier inputted from the data signal inputted from the strange recovery section 25 and the carrier generation section 27, and outputting to the transceiver change section 29 and the mixed wave inputted from the transceiver change section 29 are divided into a communication link carrier, a data signal, etc. It performs outputting the separated data signal to the strange recovery section 25.

[0037] Moreover, the transceiver change section 29 is the data signal which was equipped with the switch function which changes transmitting processing and reception, and was inputted from mixing / separation section 28 (in this example). Output a mixed wave with a communication link carrier to the antenna section 11, and it is made to transmit by wireless from a sector unit, It performs inputting the data signal received on radio by the sector unit of the antenna section 11 (this example mixed wave with a communication link carrier), and outputting to mixing / separation section 28.

[0038] The control section 15 is equipped with RAM31 used for the working area of CPU30 and CPU30 which performs various kinds of data processing etc., ROM (for example, flash ROM)32 which stored the control program etc., DPRAM33 which send and receive data etc. between the BB sections 12, and the LAN interface section 34 which send and receive data etc. between backbone networks 3. Here, DPRAM33 is connected with the communications control section 22 of the above-mentioned BB section 12, and the LAN interface section 34 is connected with the backbone network 3.

[0039] CPU30 performs carrying out generalization control of each above-mentioned processing sections 11-14, and performing various kinds of processings by developing and performing the control program stored in ROM32 to RAM31. For example, it sets to the radio of a key station 1 and the child office 2. Change 12 sector units with which the antenna section 11 was equipped in the information signal and enabling signal which controlled and generated the BB section 12, the IF section 13, and the RF section 14 in above-mentioned CPU30, the data signal, or the confirmation-of-receipt signal, and



wireless transmission is carried out, It performs controlling the RF section 14, the IF section 13, and the BB section 12, and carrying out reception of the demand signal, data signal, and confirmation-of-receipt signal which changed these 12 sector antennas and carried out wireless reception.

→ [0040] Moreover, in the control section 15 of this example, it is prepared in the memory of RAM31 grade each [ in which the same CCB table Q2 as what was shown in above-mentioned drawing 9 is held by the key station 1 ] child office 2 of every. Corresponding to the identifiers 71a-71c of each child office 2 which a key station 1 holds, the state number 72 and sector number 73 grade of each child office 2 concerned are set to this CCB table Q2 by CPU30, and a change etc. is made to it timely. In addition, this example explains from from [ after / expedient / explaining ] using the sign same as a sign of the CCB table Q2 grade prepared in the control section 15 as what was shown in above-mentioned drawing 9.

[0041] The identification number (UM\_ID) of the proper by which a key station 1 faces holding each child office 2, and is given to each child office 2 concerned, for example as identifiers 71a-71c of each above-mentioned child office 2 is used. Moreover, it is the information which shows the condition of each child office 2 in the above-mentioned state number 72, and is the information which specifies the sector unit used for a communication link among 12 sector units with which the antenna section 11 was equipped in a sector number 73, and 12 kinds of sector numbers (for example, "0"- "11") are used in this example corresponding to 12 sector units.

[0042] The management tool which matches and manages the directional antenna used for the communication link with the identifier of the child office which can radiocommunicate, and the child office concerned consists of these examples by matching and managing the sector unit used for the communication link with the identification number of a key station 1 and the child office 2 which can be radiocommunicated, and the child office 2 concerned on the CCB table Q2 which the control section 15 described above. In addition, as an identifier of the child office managed with a management tool, as long as it can pinpoint each child office, what kind of thing may be used.

[0043] As described above, a setup, modification, etc. of the CCB table Q2 of this example are made by above-mentioned CPU30. Moreover, specifically For example, when the demand signal from the child office 2 which does not yet recognize the information signal according to having carried out wireless transmission from a key station 1 (registration) is received It starts matching and managing the sector unit which set up the CCB table Q2 with new CPU30, and received the identification number and the demand signal concerned of the child office 2 concerned.

[0044] Moreover, when the control section 15 of a key station 1 receives the demand signal which requires the data communication from the already managed child office 2 to a key station 1 after the above-mentioned setup (registration), for example When the sector unit which received the demand signal concerned differs from the sector unit managed on the CCB table Q2, CPU30 performs changing the contents of management of the child office 2 concerned into the sector unit which received the demand signal concerned. Moreover, in this example, also when CPU30 discovers the child office 2 missed once so that it may mention later for example, changing the contents of management of the child office 2 concerned with the resetting means which CPU30 concerned mentions later (resetting) is performed.

[0045] Here, as a procedure of the radio performed between the key station 1 of this example, and the child office 2, if the point of having added further the procedure of performing the communication link of the inquiry signal and reply signal which are later mentioned, for example by this example is removed, it is the same as that of the communication procedure shown in the above-mentioned conventional example. It performs detecting the child office 2 which is not specifically recognized yet by carrying out wireless transmission of the information signal in CPU30 of a key station 1 and which can be radiocommunicated. On the other hand, in the child office 2 which is not yet recognized by the key station 1 or the child office 2 which is already recognized and is managed, it performs requiring the going-up data communication from the child office 2 concerned to a key station 1 etc. by carrying out wireless transmission of the demand signal to a key station 1.

[0046] moreover, when the demand signal with which wireless transmission of the key station 1 was



carried out, for example from the child office 2 is received Go up an enabling signal by CPU30 of a key station 1 by carrying out wireless transmission to the child office 2 concerned, and authorization of data communication etc. is notified. When the data signal by which wireless transmission was carried out from the child office 2 concerned according to the enabling signal concerned is received, according to the receiving situation of the data signal concerned, wireless transmission of the confirmation-of-receipt signals, such as ACK and NAK, is carried out to the child office 2 concerned.

[0047] Moreover, in [ to the child office 2 which the key station 1 has already managed ] getting down and performing data communication While notifying the purport which performs the data communication concerned by carrying out wireless transmission of the enabling signal to the child office 2 concerned in a key station 1 Wireless transmission of the data signal over the child office 2 concerned is carried out, and in this case, if the data signal concerned is received by the child office 2 concerned, the confirmation-of-receipt signal of ACK and NAK by which wireless transmission was carried out from the child office 2 concerned will be received in a key station 1.

[0048] Moreover, in the above radio, in case CPU30 carries out wireless transmission of an enabling signal, a data signal, or the confirmation-of-receipt signal to the child office 2, referring to the contents of management of the CCB table Q2 described above by CPU30 concerned is performed, and this performs changing to the sector unit managed corresponding to the identification number of the child office 2 concerned, and carrying out wireless transmission of the data signal etc. by CPU30. When such a sector unit is changed and CPU30 carries out wireless transmission of the data signal to the child office 2, the data transmitting means which changes to the directional antenna which has managed the data signal over a child office corresponding to the identifier of the child office concerned, and carries out wireless transmission consists of these examples.

[0049] Although wireless transmission of the confirmation-of-receipt signal is carried out from the child office 2 concerned to a key station 1 by this example according to the receiving situation when the data signal which carried out wireless transmission from the key station 1 to the child office 2 is received by the child office 2 concerned as described above for example, when the child office 2 concerned has moved to the subordinate of other sector units from the subordinate of the sector unit managed by the key station 1 Since the data signal from a key station 1 is unreceivable in the child office 2 concerned, carrying out wireless transmission of the above-mentioned confirmation-of-receipt signal will not be performed, either, but the child office 2 concerned will be missed in a key station 1.

[0050] So, in CPU30 of this example, when wireless transmission of the data signal is carried out to the child office 2, it performs carrying out wireless transmission of the inquiry signal which contains the identification number of the child office 2 concerned using a different sector unit from the sector unit which carried out wireless transmission of the data signal concerned through the information signal slot B according to having not received the confirmation-of-receipt signal from the child office 2 concerned. In addition, except when transmitting an inquiry signal, the identification number of the child office 2 is not contained in the usual information signal transmitted through the information signal slot B.

→ [0051] Moreover, in CPU30 of this example, when the confirmation-of-receipt signal from the child office 2 is not received even if predetermined carries out time amount (for example, predetermined frame number) progress after carrying out wireless transmission of the data signal, for example, it is regarded as what did not receive the confirmation-of-receipt signal concerned, and asks, and a signal is transmitted. In addition, I hope that the sector unit which receives a confirmation-of-receipt signal from the child office 2 concerned is not necessarily the same as the sector unit which transmits a data signal to the child office 2. after [ for example, ] the child office 2 receives the data signal which carried out wireless transmission from the sector unit of 1 with which the key station 1 was equipped -- the subordinate of the sector unit of others [ office / 2 / concerned / child ] -- moving -- being concerned -- others -- the mode of carrying out wireless transmission of the confirmation-of-receipt signal to a sector unit may be used.

[0052] According to having not received the confirmation-of-receipt signal from a child office to the data signal which carried out wireless transmission, the inquiry means which carries out wireless transmission of the inquiry signal which contains the identifier of the child office concerned using a

different directional antenna from the directional antenna which carried out wireless transmission of the data signal concerned consists of these examples by CPU30 asking as mentioned above and carrying out wireless transmission of the signal.

[0053] Moreover, carrying out wireless transmission of the reply signal to a key station 1, when [ which contained the self (the child office 2 concerned) identification number in the child office 2 of this example so that it might mention later ] it asks and a signal is received is performed. In CPU30 of this example, it performs resetting the contents of management of the CCB table Q2 described above to the sector unit which received the reply signal concerned according to having received such a reply signal from the child office 2. That is, it can consider that the child office 2 concerned is what exists in the subordinate of a sector unit who received the reply signal concerned, and by the control section 15 of a key station 2, the sector unit which received the identification number and the reply signal concerned of the child office 2 concerned is matched by the above-mentioned resetting processing, and it comes to be managed by it.

[0054] In addition, in this example, distinguishing a usual demand signal and a usual reply signal using the flag which the reply signal from the child office 2 was transmitted through the demand signal slots R1-R12, for example, was formed into the slot R1 concerned - R12 is performed so that it may mention later. According to having received the reply signal which carried out wireless transmission and by which asked and wireless transmission was carried out from the child office according to the signal, a resetting means reset the contents of management of the child office concerned by said management tool to the directional antenna which received the reply signal concerned consists of these examples by resetting the contents of management of the CCB table Q2 according to CPU30 having received the reply signal from the child office 2 as mentioned above.

[0055] Moreover, when the child office 2 missed once as mentioned above is discovered in CPU30 of this example and the contents of management of the child office 2 concerned are reset, although wireless transmission was carried out to the child office 2 concerned, it can also perform resending using the sector unit which reset the data signal which originates in migration of the child office 2 concerned, and is not yet received. Thereby, in a key station 1, since the child office 2 has moved out of the subordinate of the sector unit managed by the key station 1, for example, it can send into the child office 2 concerned by resending using the sector unit after resetting the data signal which was not able to be sent into the child office 2 concerned.

[0056] When CPU30 performs resending processing of a data signal after resetting of the CCB table Q2 as mentioned above, a resending means to resend the data signal over a child office using the directional antenna which reset with said resetting means consists of these examples. In addition, when it is said that it is not necessary to resend the data signal which was not necessarily received by the child office 2 like [ in the case of communicating the voice of real time with a data signal, for example ], the above-mentioned resending processing does not need to be performed and a key station 1 does not need to be equipped with the above-mentioned resending means.

[0057] The child office 2 which carries out wireless transmission and does not yet recognize the information signal by the above configuration in the key station 1 of this example and which can be communicated is detected, An identification number, a sector unit, etc. of the child office 2 which were detected are matched and managed, When it performs radiocommunicating a data signal using an enabling signal, a confirmation-of-receipt signal, etc. between the managed child offices 2 and the child office 2 where it moved has been missed The child office 2 concerned is discovered using an inquiry signal, and it performs resetting the contents of management of the child office 2 concerned, or resending the data signal to the child office 2 concerned. Moreover, in the key station 1 of this example, it also performs transmitting and receiving data etc. between backbone networks 3 through the LAN interface section 34.

[0058] In addition, an example of the Rch receiving sector rotation table Q1 which memorizes the sector unit changed to the timing to which the key station 1 of this example transmits and receives a signal using the information signal slot B and the demand signal slots R1-R12 is shown in drawing 2, and this table Q2 is stored in the ROM32 grade of the above-mentioned key station 1. Between the key station 1

of this example, and the child office 2, on the Rch receiving sector rotation table Q1 which radio was performed by having made the communication link frame of 12 into one period, and was shown in above-mentioned drawing 2 The sector number of the sector unit changed to the sector number (Bch transmitting sector: "0"- "11") of the sector unit changed by the information signal slot B in each [ these ] communication link frame by each demand signal slots R1-R12 (Rch receiving sector:) "0"- "11" is matched and memorized.

[0059] In the key station 1 of this example, a sector unit is changed according to the contents of storage of the above-mentioned Rch receiving sector rotation table Q1, and the sector unit which specifically carries out wireless transmission of the information signal for every communication link frame by making the communication link frame of continuous 12 into one period is changed to the sector unit (for example, order [ sector number ], such as "0", "1", ..., "11") which carries out sequential contiguity. Thereby, since wireless transmission of the information signal can be carried out from all sector units by making the communication link frame of 12 into one period, the child office 2 which is not yet recognized and which can be communicated is efficiently detectable in the key station 1 of this example.

[0060] Moreover, in this example, since [ above-mentioned ] it asks and wireless transmission also of the signal is carried out using the information signal slot B, like the above, the missed child office 2 can be asked and it can discover efficiently with a signal in a key station 1. In addition, as a desirable mode, if the data signal concerned is changed and asked to the sector unit which carries out sequential contiguity from the sector unit which carried out wireless transmission and it is made to carry out wireless transmission of the signal when a confirmation-of-receipt signal is not received, although the key station 1 carried out wireless transmission of the data signal to the child office 2, the child office 2 concerned can look for the child office 2 concerned from near the field which existed from the first, and is efficient.

[0061] Moreover, it is based on the timing which received the information signal by which wireless transmission was carried out from the key station 1 in the child office 2 of this example. The sector unit change sequence of the key station 1 in each demand signal slots R1-R12 in subsequent communication link frames can be grasped. By this in the child office 2 The timing which carries out wireless transmission of the demand signal to a key station 1, and the change timing of the sector unit by the key station 1 can be doubled.

[0062] The example of a configuration of the child office 2 of this example is shown in drawing 3 . Moreover, in this child office 2 For example, the antenna section 41 equipped with the antenna with directivity and the baseband processing section (BB section) 42 which performs processing of baseband signaling etc., It has the RF section 44 which performs mixing the IF section 43 which performs the strange recovery of baseband signaling etc., and baseband signaling and a communication link carrier, dissociating, etc., and the control section 45 to which control etc. carries out each [ these ] processing sections 41-44. Here, in the child office 2 of this example, about the configuration and actuation of each processing sections 52-54 with which the BB section 42 was equipped, each processing sections 55 and 56 with which the IF section 43 was equipped, and each processing sections 57-59 with which the RF section 44 was equipped, it is the same as that of the configuration of each processing sections 22-29 with which the above-mentioned key station 1 was equipped etc., and these explanation is omitted.

[0063] The antenna section 41 of the child office 2 of this example is equipped with the switch section 51 which changes the sector unit used for a communication link out of these [ 6 sector antenna section N which consisted of sector units which allotted six sector units which have directivity to the radial, and ] six sector units, and the change of the sector unit by the switch section 51 is controlled by the control section 45 mentioned later.

[0064] Moreover, in this example, when the child office 2 is started, for example, while a sector unit with the most sufficient receiving sensibility shall be chosen and changing out of six sector units from after [ expedient ] explaining, the change of a sector unit shall not be performed for the midst to which data communication is performed between key stations 1 henceforth. In addition, as long as the communication link quality which the child office 2 does not necessarily need to be equipped with an

antenna with directivity, for example, is demanded is secured, you may have the antenna of other classes.

[0065] CPU60 which performs various kinds of data processing etc. in the control section 45 of the child office 2 of this example, RAM61 used for the working area of CPU60 etc., and ROM62 which stored the control program etc. (for example, flash ROM), It has the FIFO section 63 which sends and receives data etc. between the BB sections 42, and the PC card interface section 64 which send and receive data etc. through the PC card interfaces F1-F3 among data processors P1-P3. Here, the FIFO section 63 is connected with the communications control section 52 of the above-mentioned BB section 42, and the PC card interface section 64 is connected with data processors P1-P3 through the above-mentioned PC card interfaces F1-F3.

[0066] Moreover, above-mentioned CPU60 performs carrying out generalization control of each above-mentioned processing sections 41-44, and performing various kinds of processings by developing and performing the control program stored in ROM62 to RAM61. For example, it sets to the radio of a key station 1 and the child office 2. In above-mentioned CPU60, control the RF section 44, the IF section 43, and the BB section 42, and reception of the information signal, the enabling signal, data signal, and confirmation-of-receipt signal which carried out wireless reception by the antenna section 41 is carried out, It performs carrying out wireless transmission of the demand signal and data signal which controlled and generated the BB section 42, the IF section 43, and the RF section 44, or the confirmation-of-receipt signal from the antenna section 41.

[0067] in addition, by above-mentioned CPU60, specifically For example, a demand etc. carries out data communication to a key station 1 by carrying out wireless transmission of the demand signal to a key station 1, after receiving an information signal from a key station 1. Moreover, when a data signal is radiocommunicated between key stations 1 based on the enabling signal received from the key station 1 and the data signal from a key station 1 is received, according to the receiving situation, wireless transmission of the confirmation-of-receipt signals, such as ACK and NAK, is carried out to a key station. When CPU60 carries out wireless transmission of the confirmation-of-receipt signal to a key station 1 as mentioned above, the confirmation-of-receipt means which carries out wireless transmission of the confirmation-of-receipt signal from a key station to a key station according to having received the data signal by which wireless transmission was carried out consists of these examples.

[0068] Moreover, in CPU60 of this example, carrying out wireless transmission of the reply signal through the demand signal slots R1-R12 to a key station 1 is performed according to the thing containing a self (the child office 2 concerned) identification number for which it asked and the signal was received from the key station 1. Here, as described above, the reply signal by which wireless transmission is carried out from the child office 2 using the demand signal slots R1-R12, and the usual demand signal are distinguished by changing the information on a flag established into the slot R1 concerned - R12. Moreover, the identification number of the child office 2 which transmitted the signal concerned is included in the demand signal and reply signal of this example.

[0069] When CPU60 carries out wireless transmission of the reply signal to a key station 1 as mentioned above, according to the thing containing a self (the child office concerned) identifier for which it asked and the signal was received from the key station, the response means which carries out wireless transmission of the reply signal to a key station consists of these examples.

[0070] The data communication to a key station 1 is required by carrying out wireless transmission of the demand signal by the above configuration to the information signal received from the key station 1 in the child office 1 of this example, It performs radiocommunicating a data signal and a confirmation-of-receipt signal between key stations 1 based on the received enabling signal from a key station 1. Moreover, it performs carrying out wireless transmission of the reply signal to a key station 1, when the inquiry signal addressed to self (the child office 2 concerned) by which wireless transmission was carried out, for example from the key station 1 is received. Moreover, when the data signal resent, for example from the key station 1 is received, it performs carrying out wireless transmission of the confirmation-of-receipt signal to a key station 1 according to the receiving situation. Moreover, in the child office 2 of this example, it also performs transmitting and receiving data etc. among the external

data processors P1-P3 through the PC card interface section 64.

[0071] In addition, in the key station 1 and the child office 2 of this example, it sets to the hardware resources equipped with CPU30, a processor, memory of 60 grades, etc., for example. Radio processings, such as inquiry signal transmitting processing in the key station 1 described above when a processor performed a control program, resetting processing of the contents of management, and resending processing of a data signal, Although considered as the configuration which controls radio processing called the reply signal transmitting processing in the above-mentioned child office 2 etc., you may consist of this inventions as hardware circuitry which each functional means for performing various kinds of processings performed by a key station and the child office, for example became independent of.

[0072] Next, an example of procedure, such as inquiry signal transmitting processing performed by the above-mentioned key station 1 of this example and management processing of the CCB table Q2, is shown using drawing 4 or drawing 5. As shown in drawing 4, namely, in the key station 1 of this example If wireless transmission of the data signal is carried out to the child office 2 concerned in the going-down data communication to the child office 2 It stands by that the confirmation-of-receipt signal (Ach) from the child office 2 concerned is received (step S1). When the confirmation-of-receipt signal by which wireless transmission was carried out from the child office 2 concerned is received, (Step S2), Normal reception of discarding the data in said data signal which already carried out wireless transmission etc. is performed (step S3), and the confirmation-of-receipt signal standby process about the data signal concerned is ended (step S4).

[0073] When [ above-mentioned ] it gets down and the confirmation-of-receipt signal from the child office 2 is not received in data communication, on the other hand, in a key station 1 (Step S2), It is judged as that to which the child office 2 concerned does not exist in the subordinate of a sector unit (namely, sector unit which carried out wireless transmission of the above-mentioned data signal) who has managed about the child office 2 concerned on the CCB table Q2. A setup for asking using the information signal slot B and carrying out wireless transmission of the signal is performed (step S5), and wireless transmission of the inquiry signal concerned is carried out using a different sector unit from the sector unit managed to the child office 2 concerned (step S4). Here, as described above, the contents of the inquiry signal set as the information signal slot B are the information on the identification number of the child office 2 used as an inquiry object.

[0074] in addition, the sector unit which carries out wireless transmission of the data signal to the child office 2 like the key station 1 of this example, and the sector unit which receives the confirmation-of-receipt signal from the child office 2 concerned with the same configuration for example, although the key station 1 received the confirmation-of-receipt signal from the child office 2, when the confirmation-of-receipt signal concerned is not able to be normally read by error etc. While the child office 2 concerned may have moved to the location from which it separated for a while from the subordinate of the sector unit managed by the key station 1 as an example It may have been said that the child office 2 concerned existed in the subordinate of the sector unit concerned only by the communication environment between the child offices 2 and key stations 1 concerned being bad as other examples. For this reason, as for whether in such a case, a key station 1 asks, and the child office 2 concerned is looked for using a signal, it is desirable to be appropriately set up according to a system use situation etc.

[0075] moreover, since changing two or more sector units one by one, asking them periodically in the key station 1 of this example, and carrying out wireless transmission of the signal is performed as described above, in the child office 2 used as an inquiry object For example, when the change of the sector unit concerned can receive the inquiry signal from a key station 1 by inner one of the changes performed by one period and receives an inquiry signal in this way, wireless transmission of the reply signal is carried out through the demand signal slots R1-R12 to a key station 1.

[0076] As shown in drawing 5, on the other hand, in the key station 1 of this example For example, it faces carrying out reception of the signal from the child office 2 through the demand signal slots R1-R12 (step S11). When the signal from the child office 2 is received normally, it judges whether the signal received based on the flag in (step S12), the slot R1 concerned - R12 is a reply signal, or it is the usual

demand signal (step S13). By this judgment, when the signal which the key station 1 received is a reply signal over the inquiry signal which is carrying out current wireless transmission In a key station 1, transmitting processing of (step S22) and the inquiry signal concerned is terminated, and it is made to carry out wireless transmission of the usual information signal by deleting a transmitting processing setup of the inquiry signal concerned set as the information signal slot B through the information signal slot B.

[0077] In addition, in a key station 1, when a signal is normally unreceivable through the demand signal slots R1-R12, for example, the processing about the demand signal slots R1-R12 concerned is ended (step S21), and the communications processing concerning the following slot etc. is performed succeedingly.

[0078] moreover, when the reply signal and demand signal by which wireless transmission was carried out as mentioned above from the child office 2 are received in a key station 1 For example, the thing for which the contents of management of the CCB table Q2 are reset to the sector number corresponding to the sector unit which received the reply signal from the child office 2, Moreover, it performs changing the contents of management of the CCB table Q2 into the sector number corresponding to the sector unit which received the demand signal from the child office 2 if needed, for example (step S14). Thereby, in the key station 1 of this example, whenever it receives a demand signal and a reply signal from the child office 2, the contents of management of the child office 2 concerned can be reset to a right sector unit every.

[0079] Moreover, in the key station 1 of this example, the following procedures perform the communications processing and resending processing of a data signal between the child offices 2. Or processing (quota scheduling processing of an enabling signal) whose judgment etc. carries out whether the purport which gets down and performs data communication is notified is performed (step S15). namely, going up to the child office 2 and notifying authorization of data communication first, in a key station 1, -- For example, the sector unit (antenna sector) which it uses for the communication link with the child office 2 according to the contents of management of (step S16) and the CCB table Q2 in getting down and performing data communication is set up (step S17). While performing creation and transmitting processing of an enabling signal to the child office 2 concerned (step S18) Creation and transmitting processing of a data signal are performed to the child office 2 concerned (step S19), and data communication with (step S20) and the child office 2 concerned is performed by making reception preparations of the confirmation-of-receipt signal from the child office 2 concerned etc. (step S21).

[0080] In going up by the key station 1, for example between the child offices 2 and performing data communication in it, moreover, the (step S16), The sector unit (antenna sector) used for the communication link with the child office 2 concerned according to the contents of management of the CCB table Q2 is set up (step S23). Creation and transmitting processing of an enabling signal are performed to the child office 2 concerned (step S24). Data communication with (step S26) and the child office 2 concerned is performed by making making reception preparations of the data signal from the child office 2 concerned (step S25), transmitting preparations of the confirmation-of-receipt signal to the child office 2 concerned, etc. (step S21).

[0081] In addition, an example of the situation of the data communication performed to drawing 6 between above-mentioned key stations 1 of this example and child offices 2 is shown. Namely, when a key station 1 carries out wireless transmission, gets down from an enabling signal or a data signal to the already managed child office 2 and performs data communication as shown in this drawing for example If the child office 2 concerned has moved to the subordinate of other sector units from the subordinate of the sector unit managed by the key station 1, since the data signal from a key station 1 etc. is unreceivable in the child office 2 concerned, In the child office 2 concerned, it does not perform carrying out wireless transmission of the confirmation-of-receipt signal to a key station 1.

[0082] In such a case, in the key station 1 of this example, when it performs looking for the child office 2 concerned by asking a sector unit with a sequential change and carrying out wireless transmission of the signal according to having not received the confirmation-of-receipt signal from the child office 2, on the other hand the child office 2 concerned receives the inquiry signal from a key station 1, a reply

signal is returned to a key station 1. While resetting the contents of management by this in a key station 1 to the sector unit which received the reply signal from the child office 2 concerned By changing to the sector unit concerned which reset and resending an enabling signal and a data signal A confirmation-of-receipt [ by which wireless transmission was carried out from the child office 2 which could get down between the child offices 2 concerned, and can perform data communication now normally, and received the data signal normally in the key station 1 ] signal called ACK for example is normally receivable.

[0083] as mentioned above, in the wireless LAN system of this example For example, even if it is the case where the key station 1 has missed the child office 2 concerned by having moved to the subordinate of other sector units from the subordinate of the sector unit in which the movable child office 2 is managed by the key station 1 While asking using a different sector unit from the sector unit managed about the child office 2 concerned according to having not received the confirmation-of-receipt signal from the child office 2 in a key station 1 and carrying out wireless transmission of the signal In order to carry out wireless transmission of the reply signal to a key station 1 according to having received the inquiry signal addressed to self (the child office 2 concerned) in the child office 2, In a key station 1, henceforth can perform normally data communication with the child office 2 concerned by using the sector unit which reset by resetting the contents of management of the child office 2 concerned to the sector unit which received the reply signal from the child office 2 concerned.

[0084] Moreover, as mentioned above, even if it is the case where the child office 2 moves freely in the inside of a field of a key station 1 which can be communicated, it can raise migratory [ of the child office 2 ] (mobility) in a key station 1, securing the communication link quality of a key station 1 and the child office 2, since the child office 2 concerned can be discovered and the contents of management can be reset by asking and carrying out wireless transmission of the signal.

[0085] Moreover, it can send into the child office 2 concerned certainly by resending after resetting the data signal which was not able to be sent to the child office 2 concerned before resetting by resending the data signal over the child office 2 like the key station 1 of this example using the sector unit which reset. Moreover, it is realizable to look for the missed child office 2 efficiently with the inquiry signal concerned by adopting the method of a change which is changed to the sector unit which carries out sequential contiguity as the method of the above-mentioned change of the sector unit at the time of carrying out wireless transmission of the signal by asking like the key station 1 of this example.

[0086] Here, as long as it is the configuration that radio of the inquiry signal which is not necessarily restricted to what was shown in drawing 1 and drawing 3 of the above-mentioned example as a configuration of the key station with which the system concerning this invention is equipped, or a child office, for example, starts this invention like the case of the above-mentioned example, and a reply signal, resetting processing of the contents of management in a key station, etc. can be performed, a key station and a child office may consist of various modes. Although considered as the configuration which connects a child office and an external data processor in the above-mentioned example as an example, a mode which the data processing function of a data processor consists of as a child office and one, for example may be used.

[0087] Moreover, although radio between a key station and a child office was performed in the above-mentioned example using the communication link frame which includes one information signal slot, two or more demand signal slots, the enabling-signal slot of a same number individual, a data signal slot, and a confirmation-of-receipt signal slot as a desirable mode If it is the configuration which can radiocommunicate the inquiry signal which starts this invention, for example like the case of the above-mentioned example, a reply signal, etc. between a key station and a child office in this invention, there will be especially no limitation about the mode of the radio concerned.

[0088] Moreover, although the above-mentioned example showed the case where this invention was applied, as a desirable mode to the wireless LAN system which equipped the key station with the sector antenna, this invention may be applied to various wireless data telecommunication systems which manage the child office where the key station which was not necessarily restricted to a wireless LAN system as Field of application of this invention, for example, was equipped with two or more directional antennas is movable, and perform radio between the child offices concerned.



[0089]

[Effect of the Invention] As explained above, according to the wireless data telecommunication system concerning this invention It faces the key station equipped with two or more directional antennas matching the directional antenna used for the communication link with the identifier of a movable child office, and the child office concerned, and managing. For example, even if it is a time of the data signal which carried out wireless transmission from the key station not being sent to the child office concerned by migration of a child office While a key station asks the data signal concerned using a different directional antenna from the directional antenna which carried out wireless transmission according to having not received the confirmation-of-receipt signal from the child office concerned and carries out wireless transmission of the signal In order for the child office concerned to carry out wireless transmission of the reply signal to the inquiry signal concerned, in a key station, data communication after the child office concerned can be normally performed by resetting the contents of management of the child office concerned to the directional antenna which received the reply signal from the child office concerned.

[0090] Moreover, in the above-mentioned key station, the data signal concerned can be certainly sent into the child office concerned by resending the data signal over a child office using the directional antenna which reset, for example. This invention is applied to the wireless LAN system which equipped the key station with the sector antenna, and is suitable. In this case moreover, when the confirmation-of-receipt signal from a child office is not received to the data signal in which the key station carried out wireless transmission, [ for example, ] By changing and asking the data signal concerned to the sector unit which carries out sequential contiguity from the sector unit which carried out wireless transmission, and being made to carry out wireless transmission of the signal, the missed child office concerned is efficiently discoverable in a key station.

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[Translation done.]

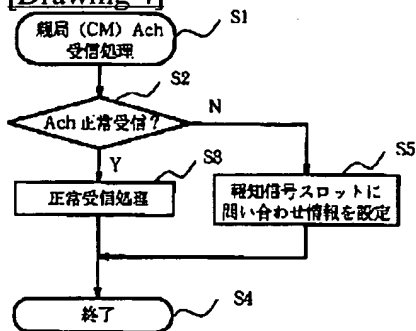
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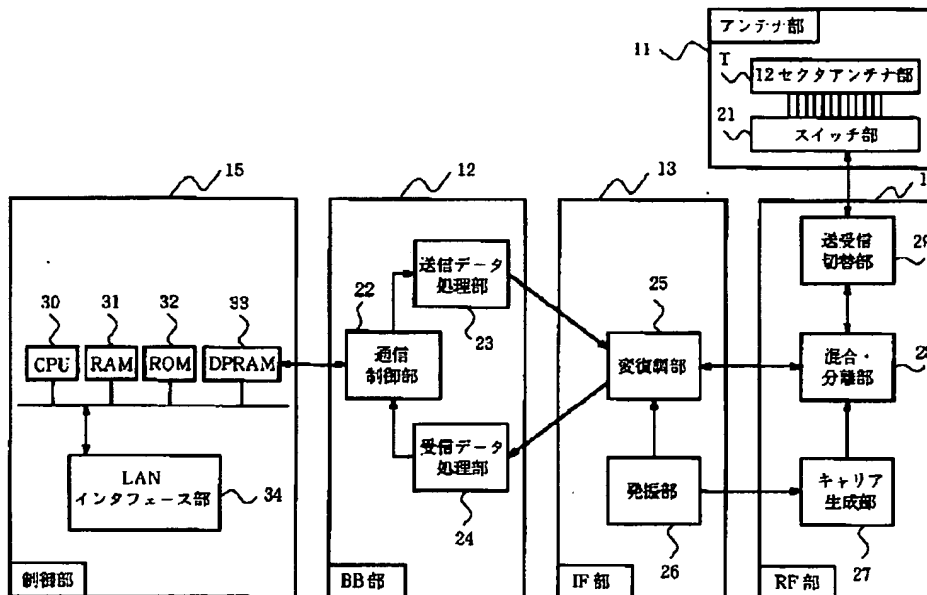
1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

## DRAWINGS

[Drawing 4]



[Drawing 1]

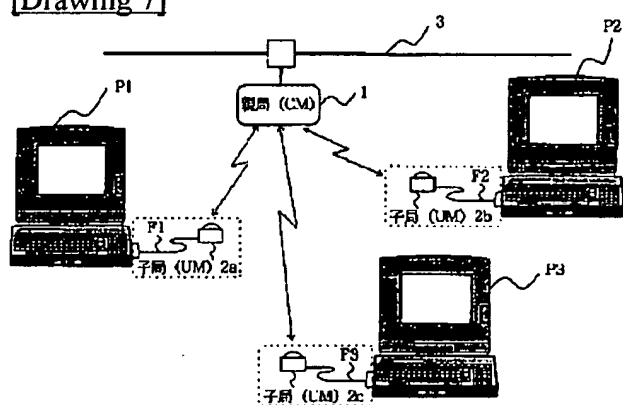


[Drawing 2]

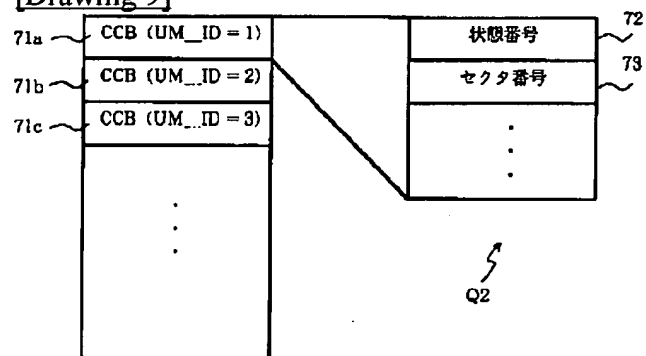
Q1

Bch送信 セクタ	Rch受信セクタ											
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12
0	1	2	3	4	5	6	7	8	9	10	11	0
1	2	3	4	5	6	7	8	9	10	11	0	1
2	3	4	5	6	7	8	9	10	11	0	1	2
3	4	5	6	7	8	9	10	11	0	1	2	3
4	5	6	7	8	9	10	11	0	1	2	3	4
5	6	7	8	9	10	11	0	1	2	3	4	5
6	7	8	9	10	11	0	1	2	3	4	5	6
7	8	9	10	11	0	1	2	3	4	5	6	7
8	9	10	11	0	1	2	3	4	5	6	7	8
9	10	11	0	1	2	3	4	5	6	7	8	9
10	11	0	1	2	3	4	5	6	7	8	9	10
11	0	1	2	3	4	5	6	7	8	9	10	11

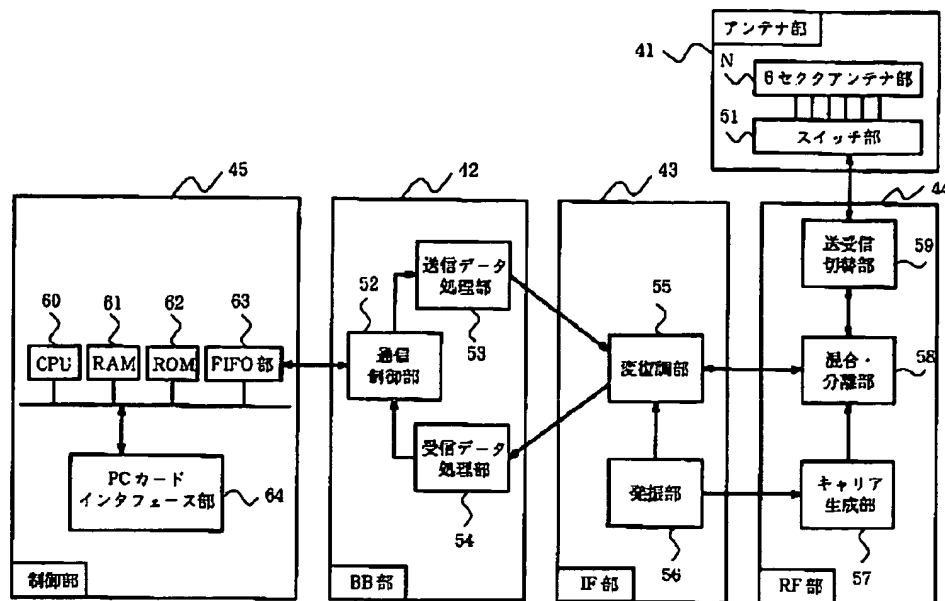
[Drawing 7]



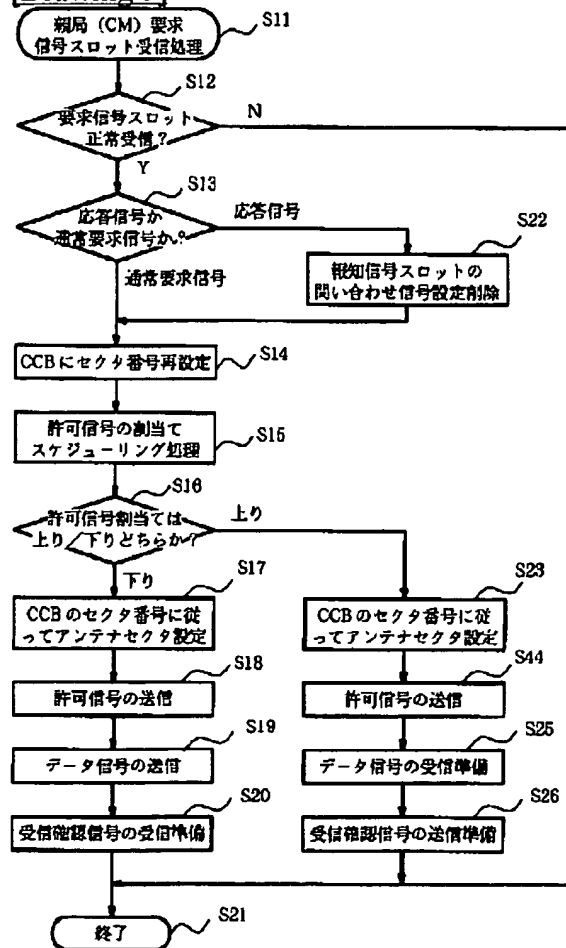
[Drawing 9]



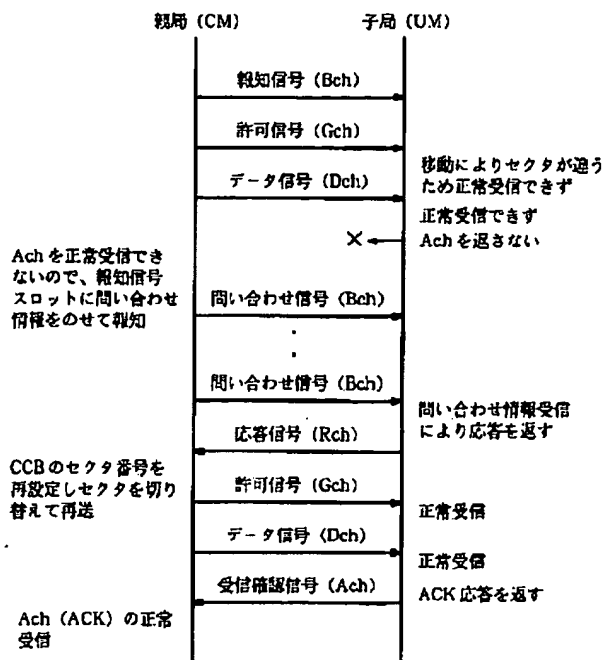
[Drawing 3]



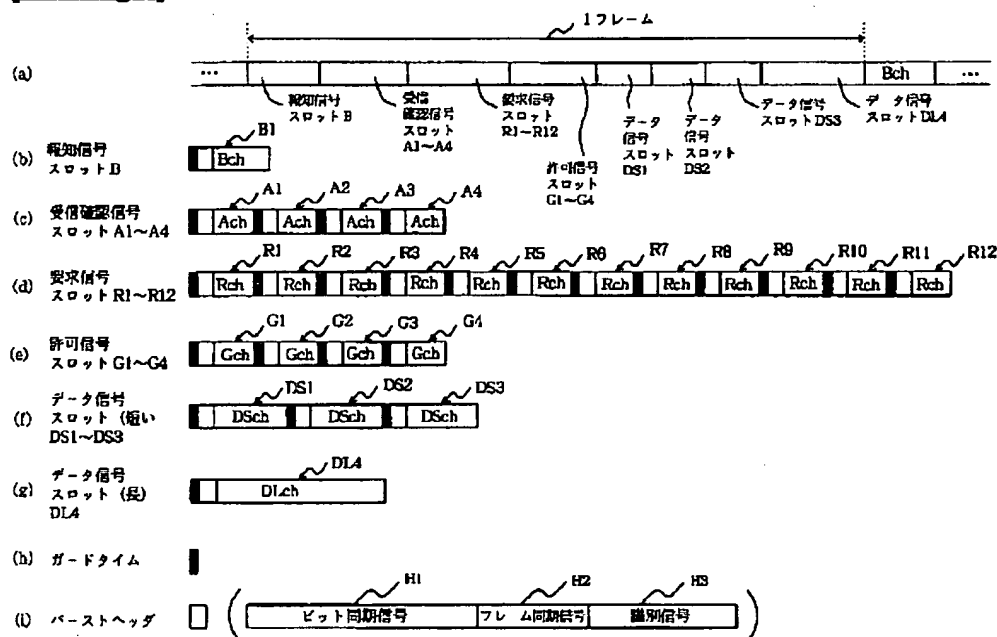
[Drawing 5]



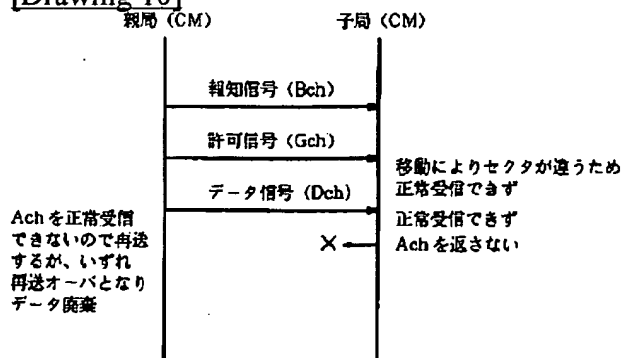
[Drawing 6]



[Drawing 8]



[Drawing 10]



**\* NOTICES \***

JPO and NCIPi are not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

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**DESCRIPTION OF DRAWINGS**

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**[Brief Description of the Drawings]**

**[Drawing 1]** It is drawing showing the example of a configuration of the key station with which the wireless LAN system concerning one example of this invention was equipped.

**[Drawing 2]** It is drawing showing an example of a Rch receiving sector rotation table.

**[Drawing 3]** It is drawing showing the example of a configuration of the child office with which the wireless LAN system concerning one example of this invention was equipped.

**[Drawing 4]** It is drawing showing an example of the procedure of the processing performed by the key station.

**[Drawing 5]** It is drawing showing an example of the procedure of the processing performed by the key station.

**[Drawing 6]** It is drawing showing an example of the situation of the radio performed between a key station and a child office.

**[Drawing 7]** It is drawing showing an example of a wireless LAN system.

**[Drawing 8]** It is drawing showing an example of the communication link frame used for the communication link between a key station and a child office.

**[Drawing 9]** It is drawing for explaining an example of a CCB table.

**[Drawing 10]** It is drawing showing an example of the situation of the radio performed between the conventional key station and a child office.

**[Description of Notations]**

1 .. Key station 2a-2c .. Child office 3 .. Backbone network, P1-P3 .. Data processor F1-F3 .. PC card interface, B .. Information signal slot A1 - A4 .. Confirmation-of-receipt signal slot, R1-R12 .. Demand signal slot G1-G4 .. Enabling-signal slot, DS1- DS3 and DL4 .. a data signal slot and Q1 .. a Rch receiving sector rotation table -- Q2 .. CCB table 11 41 .. 12 The antenna section, 42 .. BB section, 13 43 .. The IF section 14 44 .. 15 The RF section, 45 .. Control section, T .. 30 12 sector antenna section, 60 .. CPU 31 61 .. RAM 32 62 [ 64 .. PC card interface section, ] .. ROM, 34 .. LAN interface section

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[Translation done.]